

SEQUENCE LISTING

<110> Bayer AG

<120> DNA coding for β -tubulin and its use

<130> Le A 33 759

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<170> PatentIn Ver. 2.1

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ggc tcc aag ttt tgg gaa gtg atc tct gac gag cat ggc att aag ccc 96

Gly Ser Lys Phe Trp Glu Val Ile Ser Asp Glu His Gly Ile Lys Pro

gat ggc aca tac cac gga gaa tct gat cta caa tta gaa cga atc aat 144
Asp Gly Thr Tyr His Gly Glu Ser Asp Leu Gln Leu Glu Arg Ile Asn

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gtg tac tat aat gaa gca cat gga ggc aaa tat gtc cca cgt gca gtt 192
Val Tyr Tyr Asn Glu Ala His Gly Gly Lys Tyr Val Pro Arg Ala Val

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ctt gtt gat ctc gag ccc gga act atg gat tcc gtc cgt tcc ggg cca 240
Leu Val Asp Leu Glu Pro Gly Thr Met Asp Ser Val Arg Ser Gly Pro

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tac ggg caa ttg ttc cgc cct gat aac tac gtg ttt gga cag tct ggc 288
Tyr Gly Gln Leu Phe Arg Pro Asp Asn Tyr Val Phe Gly Gln Ser Gly

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gca gga aat aac tgg gca aaa ggt cac tac act gaa ggc gct gaa ctt 336
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Val Asp Asn Val Leu Asp Val Val Arg Lys Glu Ala Glu Gly Cys Asp

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Ser Gly Met Gly Thr Leu Leu Ile Ser Lys Ile Arg Glu Glu Tyr Pro
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 Asp Arg Ile Met Ser Ser Phe Ser Val Val Pro Ser Pro Lys Val Ser
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gac act gtt gtg gag cct tac aat gct acc cta tcc gtt cat cag ttg 576
 Asp Thr Val Val Glu Pro Tyr Asn Ala Thr Leu Ser Val His Gln Leu
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gtt gaa aat aca gac gag act tat tgt att gac aat gaa gcc ctg tat 624
 Val Glu Asn Thr Asp Glu Thr Tyr Cys Ile Asp Asn Glu Ala Leu Tyr
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gat att tgc ttc cgc act ttg aaa ctc acg aac cca act tat gga gat 672
 Asp Ile Cys Phe Arg Thr Leu Lys Leu Thr Asn Pro Thr Tyr Gly Asp
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 Arg Phe Pro Gly Gln Leu Asn Ala Asp Leu Arg Lys Leu Ala Val Asn
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 Met Val Pro Phe Pro Arg Leu His Phe Phe Met Pro Gly Phe Ala Pro
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Pro Arg His Gly Arg Tyr Leu Thr Val Ala Ala Met Phe Arg Gly Arg

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1008

Met Ser Met Arg Glu Val Asp Asp Gln Met Met Ser Val Gln Asn Lys

325

330

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aac tcc tca tac ttc gta gag tgg atc ccg aac aac gtg aag acc gct
1056

Asn Ser Ser Tyr Phe Val Glu Trp Ile Pro Asn Asn Val Lys Thr Ala

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gta tgc gac atc ccg cca cga gga ctg aag atg gcc gct acc ttc gtt
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Val Cys Asp Ile Pro Pro Arg Gly Leu Lys Met Ala Ala Thr Phe Val

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Gly Asn Ser Thr Ala Ile Gln Glu Leu Phe Lys Arg Ile Ser Glu Gln

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Val Tyr Tyr Asn Glu Ala His Gly Gly Lys Tyr Val Pro Arg Ala Val

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Leu Val Asp Leu Glu Pro Gly Thr Met Asp Ser Val Arg Ser Gly Pro

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Tyr Gly Gln Leu Phe Arg Pro Asp Asn Tyr Val Phe Gly Gln Ser Gly

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95

Ala Gly Asn Asn Trp Ala Lys Gly His Tyr Thr Glu Gly Ala Glu Leu

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Val Asp Asn Val Leu Asp Val Val Arg Lys Glu Ala Glu Gly Cys Asp

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Cys Leu Gln Gly Phe Gln Leu Thr His Ser Leu Gly Gly Gly Thr Gly

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Ser Gly Met Gly Thr Leu Leu Ile Ser Lys Ile Arg Glu Glu Tyr Pro

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Asp Arg Ile Met Ser Ser Phe Ser Val Val Pro Ser Pro Lys Val Ser

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Asp Thr Val Val Glu Pro Tyr Asn Ala Thr Leu Ser Val His Gln Leu

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Val Glu Asn Thr Asp Glu Thr Tyr Cys Ile Asp Asn Glu Ala Leu Tyr

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Asp Ile Cys Phe Arg Thr Leu Lys Leu Thr Asn Pro Thr Tyr Gly Asp

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Leu Asn His Leu Val Ser Val Thr Met Ser Gly Val Thr Thr Cys Leu

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Arg Phe Pro Gly Gln Leu Asn Ala Asp Leu Arg Lys Leu Ala Val Asn

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Met Val Pro Phe Pro Arg Leu His Phe Phe Met Pro Gly Phe Ala Pro

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Leu Ser Ala Lys Gly Ala Gln Ala Tyr Arg Ala Leu Thr Val Ala Glu

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Leu Thr Gln Gln Met Phe Asp Ala Lys Asn Met Met Ala Ala Cys Asp

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Pro Arg His Gly Arg Tyr Leu Thr Val Ala Ala Met Phe Arg Gly Arg

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Met Ser Met Arg Glu Val Asp Asp Gln Met Met Ser Val Gln Asn Lys

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330

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Asn Ser Ser Tyr Phe Val Glu Trp Ile Pro Asn Asn Val Lys Thr Ala

340

345

350

Val Cys Asp Ile Pro Pro Arg Gly Leu Lys Met Ala Ala Thr Phe Val

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360

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Gly Asn Ser Thr Ala Ile Gln Glu Leu Phe Lys Arg Ile Ser Glu Gln

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Phe Thr Ala Met Phe Arg Arg Lys Ala Phe Leu His Trp Tyr Thr Gly

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Glu Gly Met Asp Glu Met Glu Phe Thr Glu Ala Glu Ser Asn Met Asn

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Met Gly Asp Leu Asp Ala Glu Gly Ala Glu Glu Ala Tyr Pro Glu Glu

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gag cac ggc att aag ccy gay ggc aca tac cay gga gaa tct gay yta 144
Glu His Gly Ile Lys Xaa Asp Gly Thr Tyr His Gly Glu Ser Asp Xaa

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caa tta gaa cga atc aat gtg tac tat aat gaa gca cat gga ggc aar 192
Gln Leu Glu Arg Ile Asn Val Tyr Tyr Asn Glu Ala His Gly Gly Lys

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tat gtc ccg cgt gca gtt ctt gtt gat ctc gag ccc gga act atg gat 240
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gtg ttt gga cag tct ggc gca gga aat aac tgg gca aaa ggt cac tac 336
Val Phe Gly Gln Ser Gly Ala Gly Asn Asn Trp Ala Lys Gly His Tyr

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Thr Glu Xaa Ala Glu Leu Val Asp Asn Val Leu Asp Val Val Arg Lys

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gaa gct gaa gga tgt gac tgt ctg cag ggc ttc cag cta act cac tca 432

Glu Ala Glu Gly Cys Asp Cys Leu Gln Gly Phe Gln Leu Thr His Ser

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Leu Gly Gly Gly Thr Gly Ser Xaa Met Gly Xaa Leu Leu Ile Xaa Lys

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Ile Arg Glu Glu Tyr Pro Asp Arg Ile Xaa Ser Ser Phe Xaa Val Val

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ccc tca cca aag gtc tyc gay acy gtt gtg gag ccg tac aat gct acc 576

Pro Ser Pro Lys Val Xaa Asp Xaa Val Val Glu Pro Tyr Asn Ala Thr

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cta tcc gtt cat cag ttg gtt gaa aat aca gac gar act twc tgt att 624

Leu Ser Val His Gln Leu Val Glu Asn Thr Asp Glu Thr Xaa Cys Ile

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Asp Asn Glu Ala Leu Tyr Asp Ile Cys Phe Arg Xaa Xaa Lys Leu Xaa

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Asn Pro Thr Tyr Gly Asp Leu Asn His Leu Val Ser Val Thr Met Ser

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ggy gtc act aca tgy ctt cgc ttc cct ggc caa ttg rry gcc gat ctw 768

Xaa Val Thr Thr Cys Leu Arg Phe Pro Gly Gln Leu Xaa Ala Asp Xaa

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aac aac gtc aar acc gcy gta tgc gac att ccg ccr aga gga ctg aaa  
1104  
Asn Asn Val Lys Thr Xaa Val Cys Asp Ile Pro Xaa Arg Gly Leu Lys  
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atg gcc gct acc ttc gtt gga aac yca act gcc aty caa gag ctg tty  
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Met Ala Ala Thr Phe Val Gly Asn Xaa Thr Ala Xaa Gln Glu Leu Phe

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aag cgc att tca gaa caa tty aca gct atg ttc cgc cgc aaa gcg tty
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Lys Arg Ile Ser Glu Gln Phe Thr Ala Met Phe Arg Arg Lys Ala Phe

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1248

Leu His Xaa Tyr Thr Xaa Glu Gly Met Asp Glu Met Glu Phe Thr Glu

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gcc gag tcc aac atg aat gat ctc atc tcc gaa tac car caa tac cag
1296

Ala Glu Ser Asn Met Asn Asp Leu Ile Ser Glu Tyr Gln Gln Tyr Gln

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gaa gct acm gct gac gat atg ggc gat ctc gat gcg gaa ggc gct gaa
1344

Glu Ala Xaa Ala Asp Asp Met Gly Asp Leu Asp Ala Glu Gly Ala Glu

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gag gct tac cct gar gaa tagamcagca gaytgtgttg cgttgttcgt
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<213> Cylicocyclus nassatus

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Glu His Gly Ile Lys Xaa Asp Gly Thr Tyr His Gly Glu Ser Asp Xaa

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Gln Leu Glu Arg Ile Asn Val Tyr Tyr Asn Glu Ala His Gly Gly Lys

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Tyr Val Pro Arg Ala Val Leu Val Asp Leu Glu Pro Gly Thr Met Asp

65 70 75 80

Xaa Val Xaa Xaa Gly Pro Tyr Gly Gln Leu Phe Arg Pro Asp Asn Tyr

85 90 95

Val Phe Gly Gln Ser Gly Ala Gly Asn Asn Trp Ala Lys Gly His Tyr

100 105 110

Thr Glu Xaa Ala Glu Leu Val Asp Asn Val Leu Asp Val Val Arg Lys

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Glu Ala Glu Gly Cys Asp Cys Leu Gln Gly Phe Gln Leu Thr His Ser

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Leu Gly Gly Gly Thr Gly Ser Xaa Met Gly Xaa Leu Leu Ile Xaa Lys

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Ile Arg Glu Glu Tyr Pro Asp Arg Ile Xaa Ser Ser Phe Xaa Val Val

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Pro Ser Pro Lys Val Xaa Asp Xaa Val Val Glu Pro Tyr Asn Ala Thr

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Xaa Val Thr Thr Cys Leu Arg Phe Pro Gly Gln Leu Xaa Ala Asp Xaa

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Met Pro Gly Phe Ala Pro Leu Ser Xaa Lys Gly Xaa Gln Ala Tyr Arg

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Ala Leu Thr Val Ala Glu Xaa Xaa Gln Xaa Met Phe Asp Ala Lys Asn

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Met Met Ala Ala Cys Asp Pro Arg His Gly Xaa Tyr Leu Thr Xaa Ala

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Ala Met Phe Arg Gly Arg Met Ser Xaa Arg Glu Val Asp Asp Gln Met

325

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335

Met Ser Val Gln Asn Lys Asn Ser Ser Tyr Phe Val Glu Trp Ile Pro

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345

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Asn Asn Val Lys Thr Xaa Val Cys Asp Ile Pro Xaa Arg Gly Leu Lys

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Lys Arg Ile Ser Glu Gln Phe Thr Ala Met Phe Arg Arg Lys Ala Phe

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Pro Ser Pro Lys Val Ser Asp Thr Val Val Glu Pro Tyr Asn Ala Thr

180

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190

cta tcc gtt cat cag ttg gtt gaa aat aca gac gag act ttc tgt att 624

Leu Ser Val His Gln Leu Val Glu Asn Thr Asp Glu Thr Phe Cys Ile

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Asp Asn Glu Ala Leu Tyr Asp Ile Cys Phe Arg Thr Leu Lys Leu Thr

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Met Met Ala Ala Cys Asp Pro Arg His Gly Arg Tyr Leu Thr Val Ala

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gcc atg ttc cga gga cga atg agc atg agg gag gta gac gac cag atg
1008

Ala Met Phe Arg Gly Arg Met Ser Met Arg Glu Val Asp Asp Gln Met

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atg tca gtg cag aac aag aac tcc tca tac ttc gta gag tgg att ccg
1056

Met Ser Val Gln Asn Lys Asn Ser Ser Tyr Phe Val Glu Trp Ile Pro

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aac aac gtc aag acc gct gta tgc gac att ccg ccg aga gga ctg aaa
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Asn Asn Val Lys Thr Ala Val Cys Asp Ile Pro Pro Arg Gly Leu Lys

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Leu His Trp Tyr Thr Gly Glu Gly Met Asp Glu Met Glu Phe Thr Glu

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gcc gag tcc aac atg aat gat ctc atc tcc gaa tac cag caa tac cag
1296

Ala Glu Ser Asn Met Asn Asp Leu Ile Ser Glu Tyr Gln Gln Tyr Gln

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gag gct tac cct gaa gaa tagacagcag attgtgttgc gttgttcggt
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Glu Ala Tyr Pro Glu Glu

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<213> Cylicocyclus nassatus

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Gln Leu Glu Arg Ile Asn Val Tyr Tyr Asn Glu Ala His Gly Gly Lys

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Tyr Val Pro Arg Ala Val Leu Val Asp Leu Glu Pro Gly Thr Met Asp

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Val Phe Gly Gln Ser Gly Ala Gly Asn Asn Trp Ala Lys Gly His Tyr

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Ile Arg Glu Glu Tyr Pro Asp Arg Ile Met Ser Ser Phe Ser Val Val

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Lys Arg Ile Ser Glu Gln Phe Thr Ala Met Phe Arg Arg Lys Ala Phe
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Leu His Trp Tyr Thr Gly Glu Gly Met Asp Glu Met Glu Phe Thr Glu
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<220>

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<222> (1) .. (1362)

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gag cac ggc att aag ccc gat ggc aca tac cac gga gaa tct gac tta 144

Glu His Gly Ile Lys Pro Asp Gly Thr Tyr His Gly Glu Ser Asp Leu

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Gln Leu Glu Arg Ile Asn Val Tyr Tyr Asn Glu Ala His Gly Gly Lys

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Tyr Val Pro Arg Ala Val Leu Val Asp Leu Glu Pro Gly Thr Met Asp

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75

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tcg gtc cgt tcc ggg cca tac ggg caa ttg ttc cgc cct gat aac tac 288
Ser Val Arg Ser Gly Pro Tyr Gly Gln Leu Phe Arg Pro Asp Asn Tyr

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90

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Val Phe Gly Gln Ser Gly Ala Gly Asn Asn Trp Ala Lys Gly His Tyr

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115

120

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1296

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420 425 430

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1344

Glu Ala Thr Ala Asp Asp Met Gly Asp Leu Asp Ala Glu Gly Ala Glu
435 440 445

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Glu Ala Tyr Pro Glu Glu
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Glu His Gly Ile Lys Pro Asp Gly Thr Tyr His Gly Glu Ser Asp Leu

35

40

45

Gln Leu Glu Arg Ile Asn Val Tyr Tyr Asn Glu Ala His Gly Gly Lys

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55

60

Tyr Val Pro Arg Ala Val Leu Val Asp Leu Glu Pro Gly Thr Met Asp

65

70

75

80

Ser Val Arg Ser Gly Pro Tyr Gly Gln Leu Phe Arg Pro Asp Asn Tyr

85

90

95

Val Phe Gly Gln Ser Gly Ala Gly Asn Asn Trp Ala Lys Gly His Tyr

100

105

110

Thr Glu Gly Ala Glu Leu Val Asp Asn Val Leu Asp Val Val Arg Lys

115

120

125

Glu Ala Glu Gly Cys Asp Cys Leu Gln Gly Phe Gln Leu Thr His Ser

130

135

140

Leu Gly Gly Gly Thr Gly Ser Ser Met Gly Thr Leu Leu Ile Phe Lys

145

150

155

160

Ile Arg Glu Glu Tyr Pro Asp Arg Ile Ile Ser Ser Phe Phe Val Val

165

170

175

Pro Ser Pro Lys Val Ser Asp Thr Val Val Glu Pro Tyr Asn Ala Thr

180

185

190

Leu Ser Val His Gln Leu Val Glu Asn Thr Asp Glu Thr Phe Cys Ile
 195 200 205

Asp Asn Glu Ala Leu Tyr Asp Ile Cys Phe Arg Thr Leu Lys Leu Thr
 210 215 220

Asn Pro Thr Tyr Gly Asp Leu Asn His Leu Val Ser Val Thr Met Ser
 225 230 235 240

Gly Val Thr Thr Cys Leu Arg Phe Pro Gly Gln Leu Ser Ala Asp Leu
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Arg Lys Leu Ala Val Asn Met Val Pro Phe Pro Arg Leu His Phe Phe
 260 265 270

Met Pro Gly Phe Ala Pro Leu Ser Ala Lys Gly Ala Gln Ala Tyr Arg
 275 280 285

Ala Leu Thr Val Ala Glu Leu Thr Gln Gln Met Phe Asp Ala Lys Asn
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Met Met Ala Ala Cys Asp Pro Arg His Gly Arg Tyr Leu Thr Val Ala
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Glu His Gly Ile Lys Pro Asp Gly Thr Tyr His Gly Glu Ser Asp Leu

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Gln Leu Glu Arg Ile Asn Val Tyr Tyr Asn Glu Ala His Gly Gly Lys

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Ser Val Arg Ser Gly Pro Tyr Gly Gln Leu Phe Arg Pro Asp Asn Tyr

85 90 95

gtg ttt gga cag tct ggc gca gga aat aac tgg gca aaa ggt cac tac 336
Val Phe Gly Gln Ser Gly Ala Gly Asn Asn Trp Ala Lys Gly His Tyr

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Leu His Trp Tyr Thr Gly Glu Gly Met Asp Glu Met Glu Phe Thr Glu

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gcc gag tcc aac atg aat gat ctc atc tcc gaa tac cag caa tac cag
1296

Ala Glu Ser Asn Met Asn Asp Leu Ile Ser Glu Tyr Gln Gln Tyr Gln

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Glu Ala Thr Ala Asp Asp Met Gly Asp Leu Asp Ala Glu Gly Ala Glu

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gag gct tac cct gaa gaa tagacagcag attgtgttgc gttgttcggt
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Glu Ala Tyr Pro Glu Glu

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Gln Leu Glu Arg Ile Asn Val Tyr Tyr Asn Glu Ala His Gly Gly Lys

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Tyr Val Pro Arg Ala Val Leu Val Asp Leu Glu Pro Gly Thr Met Asp

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85 90 95

Val Phe Gly Gln Ser Gly Ala Gly Asn Asn Trp Ala Lys Gly His Tyr

100 105 110

Thr Glu Gly Ala Glu Leu Val Asp Asn Val Leu Asp Val Val Arg Lys

115 120 125

Glu Ala Glu Gly Cys Asp Cys Leu Gln Gly Phe Gln Leu Thr His Ser

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Pro Ser Pro Lys Val Phe Asp Thr Val Val Glu Pro Tyr Asn Ala Thr

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190

Leu Ser Val His Gln Leu Val Glu Asn Thr Asp Glu Thr Phe Cys Ile

195

205

Asp Asn Glu Ala Leu Tyr Asp Ile Cys Phe Arg Thr Leu Lys Leu Thr

210

220

Asn Pro Thr Tyr Gly Asp Leu Asn His Leu Val Ser Val Thr Met Ser

225

235

240

Gly Val Thr Thr Cys Leu Arg Phe Pro Gly Gln Leu Asn Ala Asp Leu

245

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Arg Lys Leu Ala Val Asn Met Val Pro Phe Pro Arg Leu His Phe Phe

260

270

Met Pro Gly Phe Ala Pro Leu Ser Ala Lys Gly Ala Gln Ala Tyr Arg

275

285

Ala Leu Thr Val Ala Glu Leu Thr Gln Gln Met Phe Asp Ala Lys Asn

290

295

300

Met Met Ala Ala Cys Asp Pro Arg His Gly Arg Tyr Leu Thr Val Ala

305

310

315

320

Ala Met Phe Arg Gly Arg Met Ser Met Arg Glu Val Asp Asp Gln Met

325

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335

Met Ser Val Gln Asn Lys Asn Ser Ser Tyr Phe Val Glu Trp Ile Pro

340

345

350

Asn Asn Val Lys Thr Ala Val Cys Asp Ile Pro Pro Arg Gly Leu Lys

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360

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Met Ala Ala Thr Phe Val Gly Asn Ser Thr Ala Ile Gln Glu Leu Phe

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375

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Lys Arg Ile Ser Glu Gln Phe Thr Ala Met Phe Arg Arg Lys Ala Phe

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390

395

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Leu His Trp Tyr Thr Gly Glu Gly Met Asp Glu Met Glu Phe Thr Glu

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Ala Glu Ser Asn Met Asn Asp Leu Ile Ser Glu Tyr Gln Gln Tyr Gln

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23

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Harder, Achim
Schneider, Thomas
Pape, Michaela

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gtg	tac	tat	aat	gaa	gca	cat	gga	ggc	aaa	tat	gtc	cca	cgt	gca	gtt	192
Val	Tyr	Tyr	Asn	Glu	Ala	His	Gly	Gly	Lys	Tyr	Val	Pro	Arg	Ala	Val	
	50					55					60					

ctt	gtt	gat	ctc	gag	ccc	gga	act	atg	gat	tcc	gtc	cgt	tcc	ggg	cca	240
Leu	Val	Asp	Leu	Glu	Pro	Gly	Thr	Met	Asp	Ser	Val	Arg	Ser	Gly	Pro	
65					70				75					80		

tac	ggg	caa	ttg	ttc	cgc	cct	gat	aac	tac	gtg	ttt	gga	cag	tct	ggc	288
Tyr	Gly	Gln	Leu	Phe	Arg	Pro	Asp	Asn	Tyr	Val	Phe	Gly	Gln	Ser	Gly	
				85					90					95		

gca	gga	aat	aac	tgg	gca	aaa	ggt	cac	tac	act	gaa	ggc	gct	gaa	ctt	336
Ala	Gly	Asn	Asn	Trp	Ala	Lys	Gly	His	Tyr	Thr	Glu	Gly	Ala	Glu	Leu	
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tgt Cys	ctg Leu 130	cag Gln	ggc Gly	ttc Phe	cag Gln	cta Leu 135	act Thr	cac His	tca Ser	ctt Leu	gga Gly 140	gga Gly	ggt Gly	acc Thr	ggt Gly	432
tcg Ser 145	ggt Gly	atg Met	ggc Gly	act Thr	ctc Leu 150	ctc Leu	atc Ile	tcc Ser	aaa Lys	att Ile 155	cgg Arg	gag Glu	gag Glu	tat Tyr	cct Pro 160	480
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gtt Val	gaa Glu	aat Asn 195	aca Thr	gac Asp	gag Glu	act Thr	tat Tyr 200	tgt Cys	att Ile	gac Asp	aat Asn	gaa Glu 205	gcc Ala	ctg Leu	tat Tyr	624
gat Asp	att Ile 210	tgc Cys	ttc Phe	cgc Arg	act Thr	ttg Leu 215	aaa Lys	ctc Leu	acg Thr	aac Asn	cca Pro 220	act Thr	tat Tyr	gga Gly	gat Asp	672
ctg Leu 225	aat Asn	cat His	ctt Leu	gtg Val	tct Ser 230	gta Val	aca Thr	atg Met	tct Ser	ggt Gly 235	gtc Val	acc Thr	aca Thr	tgt Cys	ctt Leu 240	720
cgc Arg	ttc Phe	cct Pro	ggc Gly	caa Gln 245	ttg Leu	aat Asn	gcc Ala	gat Asp	cta Leu 250	cgc Arg	aaa Lys	cta Leu	gct Ala	gtt Val 255	aac Asn	768
atg Met	gtt Val	cca Pro	ttc Phe 260	cct Pro	cgt Arg	ctt Leu	cac His	ttc Phe 265	ttc Phe	atg Met	cct Pro	ggt Gly	ttt Phe 270	gct Ala	cct Pro	816
ctt Leu	tct Ser	gct Ala 275	aaa Lys	ggt Gly	gct Ala	cag Gln 280	gct Ala	tac Tyr	cgt Arg	gct Ala	ctt Leu	acc Thr 285	gta Val	gcc Ala	gag Glu	864
ctt Leu 290	aca Thr	cag Gln	cag Gln	atg Met	ttt Phe	gat Asp 295	gct Ala	aag Lys	aat Asn	atg Met	atg Met 300	gct Ala	gct Ala	tgc Cys	gac Asp	912
cct Pro 305	cga Arg	cat His	gga Gly	cgt Arg	tat Tyr 310	ctc Leu	acc Thr	gtc Val	gca Ala	gcc Ala 315	atg Met	ttc Phe	cga Arg	gga Gly	aga Arg 320	960
atg Met	agc Ser	atg Met	agg Arg	gaa Glu 325	gta Val	gac Asp	gac Asp	cag Gln	atg Met 330	atg Met	tca Ser	gtg Val	cag Gln	aac Asn 335	aag Lys	1008
aac Asn	tcc Ser	tca Ser	tac Tyr 340	ttc Phe	gta Val	gag Glu	tgg Trp	atc Ile 345	ccg Pro	aac Asn	aac Asn	gtg Val 350	aag Lys	acc Thr	gct Ala	1056
gta Val	tgc Cys	gac Asp 355	atc Ile	ccg Pro	cca Pro	cga Arg	gga Gly 360	ctg Leu	aag Lys	atg Met	gcc Ala	gct Ala 365	acc Thr	ttc Phe	gtt Val	1104

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 Gly Asn Ser Thr Ala Ile Gln Glu Leu Phe Lys Arg Ile Ser Glu Gln
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 Phe Thr Ala Met Phe Arg Arg Lys Ala Phe Leu His Trp Tyr Thr Gly
 385 390 395 400

gaa ggt atg gac gag atg gag ttc act gaa gca gag tcc aac atg aat 1248
 Glu Gly Met Asp Glu Met Glu Phe Thr Glu Ala Glu Ser Asn Met Asn
 405 410 415

gat ctc atc tcc gag tac caa cag tac cag gaa gcc acc gct gac gac 1296
 Asp Leu Ile Ser Glu Tyr Gln Gln Tyr Gln Glu Ala Thr Ala Asp Asp
 420 425 430

atg ggc gat ctt gat gcg gaa ggc gct gaa gag gct tat cct gag gaa 1344
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taaaccagca gatcgtgttg cgttgttcgt ttctct 1380

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 <213> Cyathostomum coronatum

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Asp Gly Thr Tyr His Gly Glu Ser Asp Leu Gln Leu Glu Arg Ile Asn
 35 40 45

Val Tyr Tyr Asn Glu Ala His Gly Gly Lys Tyr Val Pro Arg Ala Val
 50 55 60

Leu Val Asp Leu Glu Pro Gly Thr Met Asp Ser Val Arg Ser Gly Pro
 65 70 75 80

Tyr Gly Gln Leu Phe Arg Pro Asp Asn Tyr Val Phe Gly Gln Ser Gly
 85 90 95

Ala Gly Asn Asn Trp Ala Lys Gly His Tyr Thr Glu Gly Ala Glu Leu
 100 105 110

Val Asp Asn Val Leu Asp Val Val Arg Lys Glu Ala Glu Gly Cys Asp
 115 120 125

Cys Leu Gln Gly Phe Gln Leu Thr His Ser Leu Gly Gly Gly Thr Gly
 130 135 140

Ser Gly Met Gly Thr Leu Leu Ile Ser Lys Ile Arg Glu Glu Tyr Pro
145 150 155 160

Asp Arg Ile Met Ser Ser Phe Ser Val Val Pro Ser Pro Lys Val Ser
165 170 175

Asp Thr Val Val Glu Pro Tyr Asn Ala Thr Leu Ser Val His Gln Leu
180 185 190

Val Glu Asn Thr Asp Glu Thr Tyr Cys Ile Asp Asn Glu Ala Leu Tyr
195 200 205

Asp Ile Cys Phe Arg Thr Leu Lys Leu Thr Asn Pro Thr Tyr Gly Asp
210 215 220

Leu Asn His Leu Val Ser Val Thr Met Ser Gly Val Thr Thr Cys Leu
225 230 235 240

Arg Phe Pro Gly Gln Leu Asn Ala Asp Leu Arg Lys Leu Ala Val Asn
245 250 255

Met Val Pro Phe Pro Arg Leu His Phe Phe Met Pro Gly Phe Ala Pro
260 265 270

Leu Ser Ala Lys Gly Ala Gln Ala Tyr Arg Ala Leu Thr Val Ala Glu
275 280 285

Leu Thr Gln Gln Met Phe Asp Ala Lys Asn Met Met Ala Ala Cys Asp
290 295 300

Pro Arg His Gly Arg Tyr Leu Thr Val Ala Ala Met Phe Arg Gly Arg
305 310 315 320

Met Ser Met Arg Glu Val Asp Asp Gln Met Met Ser Val Gln Asn Lys
325 330 335

Asn Ser Ser Tyr Phe Val Glu Trp Ile Pro Asn Asn Val Lys Thr Ala
340 345 350

Val Cys Asp Ile Pro Pro Arg Gly Leu Lys Met Ala Ala Thr Phe Val
355 360 365

Gly Asn Ser Thr Ala Ile Gln Glu Leu Phe Lys Arg Ile Ser Glu Gln
370 375 380

Phe Thr Ala Met Phe Arg Arg Lys Ala Phe Leu His Trp Tyr Thr Gly
385 390 395 400

Glu Gly Met Asp Glu Met Glu Phe Thr Glu Ala Glu Ser Asn Met Asn
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Met Gly Asp Leu Asp Ala Glu Gly Ala Glu Glu Ala Tyr Pro Glu Glu
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<213>	Cylicocycclus nassatus

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<222> (1)..(1362)
<223> Xaa is a variable amino acid.
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1				5					10					15			
car	tgt	gga	aac	caa	att	ggg	tcc	aag	tty	tgg	gaa	gtg	atc	tct	gac		96
Gln	Cys	Gly	Asn	Gln	Ile	Xaa	Ser	Lys	Phe	Trp	Glu	Val	Ile	Ser	Asp		
			20					25					30				
gag	cac	ggc	att	aag	ccy	gay	ggc	aca	tac	cay	gga	gaa	tct	gay	yta		144
Glu	His	Gly	Ile	Lys	Xaa	Asp	Gly	Thr	Tyr	His	Gly	Glu	Ser	Asp	Xaa		
		35					40					45					
caa	tta	gaa	cga	atc	aat	gtg	tac	tat	aat	gaa	gca	cat	gga	ggc	aar		192
Gln	Leu	Glu	Arg	Ile	Asn	Val	Tyr	Tyr	Asn	Glu	Ala	His	Gly	Gly	Lys		
	50					55					60						
tat	gtc	ccg	cgt	gca	gtt	ctt	gtt	gat	ctc	gag	ccc	gga	act	atg	gat		240
Tyr	Val	Pro	Arg	Ala	Val	Leu	Val	Asp	Leu	Glu	Pro	Gly	Thr	Met	Asp		
65				70						75					80		
tcr	gtc	cgy	tcy	ggg	cca	tac	ggg	caa	ttg	ttc	cgc	cct	gat	aac	tac		288
Xaa	Val	Arg	Xaa	Gly	Pro	Tyr	Gly	Gln	Leu	Phe	Arg	Pro	Asp	Asn	Tyr		
				85					90					95			
gtg	ttt	gga	cag	tct	ggc	gca	gga	aat	aac	tgg	gca	aaa	ggg	cac	tac		336
Val	Phe	Gly	Gln	Ser	Gly	Ala	Gly	Asn	Asn	Trp	Ala	Lys	Gly	His	Tyr		
			100					105					110				
act	gaa	ggg	gct	gaa	ctt	gtc	gac	aat	gta	cta	gat	gta	gtg	cga	aaa		384
Thr	Glu	Xaa	Ala	Glu	Leu	Val	Asp	Asn	Val	Leu	Asp	Val	Val	Arg	Lys		
		115					120					125					
gaa	gct	gaa	gga	tgt	gac	tgt	ctg	cag	ggc	ttc	cag	cta	act	cac	tca		432
Glu	Ala	Glu	Gly	Cys	Asp	Cys	Leu	Gln	Gly	Phe	Gln	Leu	Thr	His	Ser		
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245 250 255

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cag Gln	tgt Cys	gga Gly	aac Asn 20	caa Gln	att Ile	ggc Gly	tcc Ser	aag Lys 25	ttt Phe	tgg Trp	gaa Glu	gtg Val	atc Ile 30	tct Ser	gac Asp	96
gag Glu	cac His	ggc Gly 35	att Ile	aag Lys	cct Pro	gat Asp	ggc Gly 40	aca Thr	tac Tyr	cac His	gga Gly 45	gaa Glu	tct Ser	gat Asp	tta Leu	144
caa Gln	tta Leu 50	gaa Glu	cga Arg	atc Ile	aat Asn	gtg Val 55	tac Tyr	tat Tyr	aat Asn	gaa Glu	gca Ala 60	cat His	gga Gly	ggc Gly	aaa Lys	192
tat Tyr 65	gtc Val	ccg Pro	cgt Arg	gca Ala 70	gtt Val	ctt Leu	gtt Val	gat Asp	ctc Leu	gag Glu 75	ccc Pro	gga Gly	act Thr	atg Met	gat Asp 80	240
tcg Ser	gtc Val	cgt Arg	tcc Ser	ggg Gly 85	cca Pro	tac Tyr	ggg Gly	caa Gln	ttg Leu 90	ttc Phe	cgc Arg	cct Pro	gat Asp	aac Asn 95	tac Tyr	288
gtg Val	ttt Phe	gga Gly	cag Gln 100	tct Ser	ggc Gly	gca Ala	gga Gly	aat Asn 105	aac Asn	tgg Trp	gca Ala	aaa Lys	ggt Gly 110	cac His	tac Tyr	336
act Thr	gaa Glu	ggc Gly 115	gct Ala	gaa Glu	ctt Leu	gtt Val	gac Asp 120	aat Asn	gta Val	cta Leu	gat Asp	gta Val 125	gtg Val	cga Arg	aaa Lys	384
gaa Glu	gct Ala 130	gaa Glu	gga Gly	tgt Cys	gac Asp	tgt Cys 135	ctg Leu	cag Gln	ggc Gly	ttc Phe	cag Gln 140	cta Leu	act Thr	cac His	tca Ser	432
ctt Leu 145	gga Gly	gga Gly	ggt Gly	acc Thr	gga Gly 150	tcg Ser	ggt Gly	atg Met	ggc Gly	act Thr 155	ctc Leu	ctc Leu	atc Ile	tcc Ser	aaa Lys 160	480
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ccc Pro	tca Ser	cca Pro	aag Lys 180	gtc Val	tcc Ser	gac Asp	acc Thr	gtt Val 185	gtg Val	gag Glu	ccg Pro	tac Tyr	aat Asn 190	gct Ala	acc Thr	576
cta Leu	tcc Ser	gtt Val 195	cat His	cag Gln	ttg Leu	gtt Val	gaa Glu 200	aat Asn	aca Thr	gac Asp	gag Glu	act Thr 205	ttc Phe	tgt Cys	att Ile	624
gac Asp	aat Asn 210	gaa Glu	gct Ala	ctt Leu	tat Tyr	gat Asp 215	att Ile	tgc Cys	ttc Phe	cgc Arg	act Thr 220	ttg Leu	aaa Lys	ctc Leu	acg Thr	672
aac Asn 225	cca Pro	act Thr	tat Tyr	gga Gly	gat Asp 230	ctg Leu	aat Asn	cat His	ctt Leu	gtg Val 235	tct Ser	gta Val	aca Thr	atg Met	tct Ser 240	720
ggt Gly	gtc Val	act Thr	aca Thr	tgt Cys 245	ctt Leu	cgc Arg	ttc Phe	cct Pro	ggc Gly 250	caa Gln	ttg Leu	aat Asn	gcc Ala	gat Asp 255	cta Leu	768

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Arg Lys Leu Ala Val Asn Met Val Pro Phe Pro Arg Leu His Phe Phe	
260 265 270	
atg cct ggc ttt gct ccc ctc tct gct aaa ggc gct cag gct tac cgt	864
Met Pro Gly Phe Ala Pro Leu Ser Ala Lys Gly Ala Gln Ala Tyr Arg	
275 280 285	
gct ctt act gta gcc gag cta act caa cag atg ttc gat gcc aaa aat	912
Ala Leu Thr Val Ala Glu Leu Thr Gln Gln Met Phe Asp Ala Lys Asn	
290 295 300	
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Ala Met Phe Arg Gly Arg Met Ser Met Arg Glu Val Asp Asp Gln Met	
325 330 335	
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Met Ser Val Gln Asn Lys Asn Ser Ser Tyr Phe Val Glu Trp Ile Pro	
340 345 350	
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355 360 365	
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370 375 380	
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Lys Arg Ile Ser Glu Gln Phe Thr Ala Met Phe Arg Arg Lys Ala Phe	
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Leu His Trp Tyr Thr Gly Glu Gly Met Asp Glu Met Glu Phe Thr Glu	
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Ala Glu Ser Asn Met Asn Asp Leu Ile Ser Glu Tyr Gln Gln Tyr Gln	
420 425 430	
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 <213> Cylicocyclus nassatus
 <400> 6

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 35 40 45
 Gln Leu Glu Arg Ile Asn Val Tyr Tyr Asn Glu Ala His Gly Gly Lys
 50 55 60
 Tyr Val Pro Arg Ala Val Leu Val Asp Leu Glu Pro Gly Thr Met Asp
 65 70 75 80
 Ser Val Arg Ser Gly Pro Tyr Gly Gln Leu Phe Arg Pro Asp Asn Tyr
 85 90 95
 Val Phe Gly Gln Ser Gly Ala Gly Asn Asn Trp Ala Lys Gly His Tyr
 100 105 110
 Thr Glu Gly Ala Glu Leu Val Asp Asn Val Leu Asp Val Val Arg Lys
 115 120 125
 Glu Ala Glu Gly Cys Asp Cys Leu Gln Gly Phe Gln Leu Thr His Ser
 130 135 140
 Leu Gly Gly Gly Thr Gly Ser Gly Met Gly Thr Leu Leu Ile Ser Lys
 145 150 155 160
 Ile Arg Glu Glu Tyr Pro Asp Arg Ile Met Ser Ser Phe Ser Val Val
 165 170 175
 Pro Ser Pro Lys Val Ser Asp Thr Val Val Glu Pro Tyr Asn Ala Thr
 180 185 190
 Leu Ser Val His Gln Leu Val Glu Asn Thr Asp Glu Thr Phe Cys Ile
 195 200 205
 Asp Asn Glu Ala Leu Tyr Asp Ile Cys Phe Arg Thr Leu Lys Leu Thr
 210 215 220
 Asn Pro Thr Tyr Gly Asp Leu Asn His Leu Val Ser Val Thr Met Ser
 225 230 235 240
 Gly Val Thr Thr Cys Leu Arg Phe Pro Gly Gln Leu Asn Ala Asp Leu
 245 250 255

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cag Gln	tgt Cys	gga Gly	aac Asn 20	caa Gln	att Ile	ggg Gly	tcc Ser	aag Lys 25	ttt Phe	tgg Trp	gaa Glu	gtg Val	atc Ile 30	tct Ser	gac Asp	96
gag Glu	cac His	ggc Gly 35	att Ile	aag Lys	ccc Pro	gat Asp	ggc Gly 40	aca Thr	tac Tyr	cac His	gga Gly 45	gaa Glu	tct Ser	gac Asp	tta Leu	144
caa Gln	tta Leu 50	gaa Glu	cga Arg	atc Ile	aat Asn	gtg Val 55	tac Tyr	tat Tyr	aat Asn	gaa Glu	gca Ala 60	cat His	gga Gly	ggc Gly	aaa Lys	192
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cta Leu	tcc Ser	gtt Val 195	cat His	cag Gln	ttg Leu	gtt Val	gaa Glu 200	aat Asn	aca Thr	gac Asp	gag Glu	act Thr 205	ttc Phe	tgt Cys	att Ile	624
gac Asp	aat Asn 210	gaa Glu	gct Ala	ctt Leu	tat Tyr	gat Asp 215	att Ile	tgc Cys	ttc Phe	cgc Arg	act Thr 220	ttg Leu	aaa Lys	ctc Leu	acg Thr	672
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Arg Lys Leu Ala Val Asn Met Val Pro Phe Pro Arg Leu His Phe Phe	
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275 280 285	
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340 345 350	
aac aac gtc aag acc gct gta tgc gac att ccg ccg aga gga ctg aaa	1104
Asn Asn Val Lys Thr Ala Val Cys Asp Ile Pro Pro Arg Gly Leu Lys	
355 360 365	
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370 375 380	
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Lys Arg Ile Ser Glu Gln Phe Thr Ala Met Phe Arg Arg Lys Ala Phe	
385 390 395 400	
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Leu His Trp Tyr Thr Gly Glu Gly Met Asp Glu Met Glu Phe Thr Glu	
405 410 415	
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435 440 445	
gag gct tac cct gag gaa tagaacagca gattgtgttg cgttgttcgt	1392
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Glu His Gly Ile Lys Pro Asp Gly Thr Tyr His Gly Glu Ser Asp Leu
35 40 45

Gln Leu Glu Arg Ile Asn Val Tyr Tyr Asn Glu Ala His Gly Gly Lys
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Tyr Val Pro Arg Ala Val Leu Val Asp Leu Glu Pro Gly Thr Met Asp
65 70 75 80

Ser Val Arg Ser Gly Pro Tyr Gly Gln Leu Phe Arg Pro Asp Asn Tyr
85 90 95

Val Phe Gly Gln Ser Gly Ala Gly Asn Asn Trp Ala Lys Gly His Tyr
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Thr Glu Gly Ala Glu Leu Val Asp Asn Val Leu Asp Val Val Arg Lys
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Glu Ala Glu Gly Cys Asp Cys Leu Gln Gly Phe Gln Leu Thr His Ser
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Leu Gly Gly Gly Thr Gly Ser Ser Met Gly Thr Leu Leu Ile Phe Lys
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Ile Arg Glu Glu Tyr Pro Asp Arg Ile Ile Ser Ser Phe Phe Val Val
165 170 175

Pro Ser Pro Lys Val Ser Asp Thr Val Val Glu Pro Tyr Asn Ala Thr
180 185 190

Leu Ser Val His Gln Leu Val Glu Asn Thr Asp Glu Thr Phe Cys Ile
195 200 205

Asp Asn Glu Ala Leu Tyr Asp Ile Cys Phe Arg Thr Leu Lys Leu Thr
210 215 220

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Gly Val Thr Thr Cys Leu Arg Phe Pro Gly Gln Leu Ser Ala Asp Leu
245 250 255

Arg Lys Leu Ala Val Asn Met Val Pro Phe Pro Arg Leu His Phe Phe
260 265 270

Met Pro Gly Phe Ala Pro Leu Ser Ala Lys Gly Ala Gln Ala Tyr Arg
 275 280 285

Ala Leu Thr Val Ala Glu Leu Thr Gln Gln Met Phe Asp Ala Lys Asn
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Met Met Ala Ala Cys Asp Pro Arg His Gly Arg Tyr Leu Thr Val Ala
 305 310 315 320

Ala Met Phe Arg Gly Arg Met Ser Met Arg Glu Val Asp Asp Gln Met
 325 330 335

Met Ser Val Gln Asn Lys Asn Ser Ser Tyr Phe Val Glu Trp Ile Pro
 340 345 350

Asn Asn Val Lys Thr Ala Val Cys Asp Ile Pro Pro Arg Gly Leu Lys
 355 360 365

Met Ala Ala Thr Phe Val Gly Asn Ser Thr Ala Ile Gln Glu Leu Phe
 370 375 380

Lys Arg Ile Ser Glu Gln Phe Thr Ala Met Phe Arg Arg Lys Ala Phe
 385 390 395 400

Leu His Trp Tyr Thr Gly Glu Gly Met Asp Glu Met Glu Phe Thr Glu
 405 410 415

Ala Glu Ser Asn Met Asn Asp Leu Ile Ser Glu Tyr Gln Gln Tyr Gln
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cag Gln	tgt Cys	gga Gly	aac Asn 20	caa Gln	att Ile	ggt Gly	tcc Ser	aag Lys 25	ttc Phe	tgg Trp	gaa Glu	gtg Val	atc Ile 30	tct Ser	gac Asp	96
gag Glu	cac His	ggc Gly 35	att Ile	aag Lys	ccc Pro	gac Asp	ggc Gly 40	aca Thr	tac Tyr	cat His	gga Gly	gaa Glu 45	tct Ser	gat Asp	cta Leu	144
caa Gln 50	tta Leu	gaa Glu	cga Arg	atc Ile	aat Asn 55	gtg Val 55	tac Tyr	tat Tyr	aat Asn	gaa Glu	gca Ala 60	cat His	gga Gly	ggc Gly	aag Lys	192
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ctt Leu 145	gga Gly	gga Gly	ggt Gly	acc Thr	gga Gly 150	tcg Ser	ggt Gly	atg Met	ggc Gly	aca Thr 155	ctc Leu	ctc Leu	atc Ile	tcc Ser	aaa Lys 160	480
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ccc Pro	tca Ser	cca Pro	aag Lys 180	gtc Val	ttc Phe	gat Asp	act Thr	gtt Val 185	gtg Val	gag Glu	ccg Pro	tac Tyr	aat Asn 190	gct Ala	acc Thr	576
cta Leu	tcc Ser	gtt Val 195	cat His	cag Gln	ttg Leu	gtt Val	gaa Glu 200	aat Asn	aca Thr	gac Asp	gag Glu	act Thr 205	ttc Phe	tgt Cys	att Ile	624
gac Asp 210	aat Asn	gaa Glu	gct Ala	ctt Leu	tat Tyr	gat Asp 215	att Ile	tgc Cys	ttc Phe	cgc Arg	acc Thr 220	ttg Leu	aaa Lys	ctc Leu	acg Thr	672
aac Asn 225	cca Pro	act Thr	tat Tyr	gga Gly	gat Asp 230	ctg Leu	aat Asn	cat His	ctt Leu	gtg Val 235	tct Ser	gta Val	aca Thr	atg Met	tct Ser 240	720
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gct Ala	ctt Leu 290	act Thr	gta Val	gcc Ala	gag Glu	cta Leu 295	act Thr	caa Gln	cag Gln	atg Met	ttc Phe 300	gat Asp	gcc Ala	aaa Lys	aat Asn	912
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gcc Ala	gag Glu	tcc Ser	aac Asn 420	atg Met	aat Asn	gat Asp	ctc Leu	atc Ile 425	tcc Ser	gaa Glu	tac Tyr	cag Gln	caa Gln 430	tac Tyr	cag Gln	1296
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35 40 45

Gln Leu Glu Arg Ile Asn Val Tyr Tyr Asn Glu Ala His Gly Gly Lys
50 55 60

Tyr Val Pro Arg Ala Val Leu Val Asp Leu Glu Pro Gly Thr Met Asp
65 70 75 80

Ser Val Arg Ser Gly Pro Tyr Gly Gln Leu Phe Arg Pro Asp Asn Tyr
85 90 95

Val Phe Gly Gln Ser Gly Ala Gly Asn Asn Trp Ala Lys Gly His Tyr
100 105 110

Thr Glu Gly Ala Glu Leu Val Asp Asn Val Leu Asp Val Val Arg Lys
115 120 125

Glu Ala Glu Gly Cys Asp Cys Leu Gln Gly Phe Gln Leu Thr His Ser
130 135 140

Leu Gly Gly Gly Thr Gly Ser Gly Met Gly Thr Leu Leu Ile Ser Lys
145 150 155 160

Ile Arg Glu Glu Tyr Pro Asp Arg Ile Met Ser Ser Phe Ser Val Val
165 170 175

Pro Ser Pro Lys Val Phe Asp Thr Val Val Glu Pro Tyr Asn Ala Thr
180 185 190

Leu Ser Val His Gln Leu Val Glu Asn Thr Asp Glu Thr Phe Cys Ile
195 200 205

Asp Asn Glu Ala Leu Tyr Asp Ile Cys Phe Arg Thr Leu Lys Leu Thr
210 215 220

Asn Pro Thr Tyr Gly Asp Leu Asn His Leu Val Ser Val Thr Met Ser
225 230 235 240

Gly Val Thr Thr Cys Leu Arg Phe Pro Gly Gln Leu Asn Ala Asp Leu
245 250 255

Arg Lys Leu Ala Val Asn Met Val Pro Phe Pro Arg Leu His Phe Phe
260 265 270

Met Pro Gly Phe Ala Pro Leu Ser Ala Lys Gly Ala Gln Ala Tyr Arg
275 280 285

Ala Leu Thr Val Ala Glu Leu Thr Gln Gln Met Phe Asp Ala Lys Asn
290 295 300

Met Met Ala Ala Cys Asp Pro Arg His Gly Arg Tyr Leu Thr Val Ala
305 310 315 320

Ala Met Phe Arg Gly Arg Met Ser Met Arg Glu Val Asp Asp Gln Met
325 330 335

Met Ser Val Gln Asn Lys Asn Ser Ser Tyr Phe Val Glu Trp Ile Pro
340 345 350

Asn Asn Val Lys Thr Ala Val Cys Asp Ile Pro Pro Arg Gly Leu Lys
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Met Ala Ala Thr Phe Val Gly Asn Ser Thr Ala Ile Gln Glu Leu Phe
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Lys Arg Ile Ser Glu Gln Phe Thr Ala Met Phe Arg Arg Lys Ala Phe
385 390 395 400

Leu His Trp Tyr Thr Gly Glu Gly Met Asp Glu Met Glu Phe Thr Glu
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Ala Glu Ser Asn Met Asn Asp Leu Ile Ser Glu Tyr Gln Gln Tyr Gln
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